



The Roland Rack

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The Roland Rack Concept

At Roland, we believe that a musician's creativity should not be stifled by the equipment he uses to amplify his instrument. We feel that an amplifier should be an extension of the instrument—not an independent entity—and that the most important thing about an amplifier's sound is that it should be YOUR SOUND rather than a sound inherent to itself. An amplification system should allow for the addition of signal processing devices, both electrically and physically. Finally, an amplification system should be able to integrate into any situation, (small

club, large concert hall, or recording studio), with equal ease.

With all of this in mind, we at Roland have created what we believe to be the next step in musical instrument amplification, The Roland Rack System. The Roland Rack System is a series of complementary products that present a complete amplification and effects package for the performing musician.

The system begins with our Pre-Amplifiers. Simply and effectively the signal enters the system and is contoured to your taste. From this point on, all the choices are yours. You can keep it simple and route the signal

out through our Power Amplifier, or expand your sound further through any of our signal processors, or use something else to modify your sound. The most important thing we designed into the system is its flexibility.

The Roland Rack System has been designed around industry standards—from the electrical standpoint of input/output impedances to the physical standpoint of rack height, width and depth.

It is truly a new era in amplification...in sound control and in music.

The two Roland Power Amplifiers have been designed specifically to supply amplification to the Roland Rack system, although they will perform equally well in any situation. Both Amplifiers are stereo; the SPA-120 features 60 watts per channel (at 8 ohms) and the SPA-240 features 120 watts per channel (at 8 ohms). Stereo Amplification of a musical instrument is especially appreciated when using stereo flanging or other time delay effects. Either amplifier can also be run in mono for increased power output.

Featured on the Power Amplifiers are input attenuators to set the level on each channel. Inputs are both balanced and unbalanced; balanced inputs have XLR connectors, while unbalanced inputs have 1/4" phone jack connectors. Speaker connections are binding posts to facilitate ease in use.

Built to withstand years of abuse on the road, the Roland Power Amplifiers are a natural complement to the Roland Rack System.

SPECIFICATIONS:

Power Output Per Channel:
SPA-240: 120 w at 8 ohms, (mono 360 w)
SPA-120: 60 w at 8 ohms, (mono 160 w)
*Note: power will increase more than 50% when rated at 4 ohms.
T.H.D.:
Better than 0.05%
S/N: Better than 110 dB
Frequency Response: 10 Hz to 100 kHz
Input Sensitivity: +4 dBm for rated output.
Input Impedance:
Balanced: 26 kohms (XLR connectors)
Unbalanced: 50 kohms (1/4" phone jacks)
Outputs: binding posts
Dimensions:
SPA-240: 19(W) x 3.6(H) x 13.5(D) in.
SPA-120: 19(W) x 3.6(H) x 10.5(D) in.
(Height dimension excludes rubber feet.)

SPA-240

POWER AMPLIFIER



SPA-120

POWER AMPLIFIER



SIP-300

GUITAR PRE-AMPLIFIER



The Roland Guitar Pre-Amplifier has been designed to give the guitarist complete control over his instrument's amplification. The Guitar Pre-Amp allows the guitarist to split his amplification set-up into separate components which permits absolute flexibility in custom tailoring his sound.

In setting out the design parameters for such an approach, we worked from the ear backward; looking for the sound, before we settled on the electronics. Consequently, our Pre-Amp delivers an incredible variety of sounds—from a detailed clean sound to a multitude of different distortion settings. The Pre-Amp

has been designed to perform well with any guitar, or any pick-up; it will adapt to your instrument, rather than the other way around.

Contained within the Guitar Pre-Amp is an Overdrive section which allows for high harmonic distortion even at relatively low volumes, achieving for the first time a reliable tube-amp type of distortion. This effect is attained through the use of discrete components which, although they are more costly, produce an effect impossible to attain using the more conventional integrated circuits. The overdrive section supplies a gain of an incredible 42 dB.

The Guitar Pre-Amp also contains a flexible tone contouring section that provides for wide-ranging frequency adjustments. Separate controls for Bass, Middle and Treble can be boosted to provide increased attenuation. In addition, each control can be switched to operate over a different frequency range. Featured also are Hi-Cut and Low-Cut filters, Master Volume Control, and Balanced and Unbalanced Outputs. Two External Effects Loops provide for the noiseless addition of effects devices.

SPECIFICATIONS:

Input level
HI: min -38 dBm (10mv), max +14 dBm (4v)
LO: min -28 dBm (30mv), max +24 dBm (12v)
Input impedance
HI: 250 kΩ, LO: 100 kΩ
Output level
Balanced: nom +4 dBm (1.23v), max +20 dBm (7.75v)
Unbalanced: nom +0.5 dBm (820mv), max +16 dBm (4.8v)
Output impedance: 600Ω (balanced and unbalanced)
Frequency range: 20 Hz—30 kHz
S/N: greater than 74 dB (nominal operating levels)
Distortion: 0.1% (20 Hz—10 kHz, +10 dBm unbalanced)
Overdrive maximum gain: 42 dB
Hi Cut Filter Cutoff: 6 kHz, 12 dB/octave
Lo Cut Filter Cutoff: 60 Hz, -12 dB/octave
Tone Selector Switches:
Treble: 6 kHz/9 kHz
Middle: 500 Hz/1 kHz
Bass: 40 Hz/50 Hz
Dimensions 19(W) x 3.6(H) x 9.7(D) in.

SIP-301

BASS GUITAR PRE-AMPLIFIER



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Amplifying the Bass Guitar has traditionally been a problem for the serious musician; either the amp had the necessary power but couldn't be controlled, or the control functions worked well, but the amp couldn't supply enough power. The Roland Bass Guitar Pre-Amp was developed to give the bass guitarist the kind of flexibility within his system that has previously been unattainable using conventional bass amplification.

In designing the Bass Guitar Pre-Amp, we set out to provide a framework for the bassist to work from; a foundation upon which he can add whatever power amplifier or effects he may deem

necessary to the furtherance of his sound.

Provided on the Pre-Amp are two inputs for either Hi Gain or Lo Gain input signals. The inputs feed into a Compression circuit to add incredible depth and punch. Contained in the Compressor section are controls for setting the operating Level of the compressor, Dynamic Range control, and Threshold control for setting the headroom. The Compressor easily facilitates into performance and operates from a ratio of 1:1 to a ratio of 1:6.6.

The tone contouring section of the Pre-Amp has been designed to operate over those fundamental and harmonic frequen-

cies produced by the bass guitar. Three individual frequency controls (Bass, Middle, and Treble) can each be boosted to provide increased attenuation. In addition, each control can be switched to operate over another frequency range.

The SIP-301 features both balanced and unbalanced outputs, and also features a variable crossover network built into the output.

Two Effects Send/Return Loops allow the addition of signal processing devices either before or after the tone controls. One Effects Loop is placed on the front panel; while the other is accessed by the rear panel, facilitating the addition of other rack-mounting signal processors.

SPECIFICATIONS:

Input level
HI: min -38 dBm (10mv), max +14 dBm (4v)
LO: min -28 dBm (30mv), max +24 dBm (12v)
Input impedance
HI: 250 kΩ, LO: 100 kΩ
Output level
Balanced: nom +4 dBm (1.23v), max +20 dBm (7.75v)
Unbalanced: nom +0.5 dBm (820mv), max +16 dBm (4.8v)
Output impedance: Balanced: 600 Ω, Unbalanced: 700 Ω
Frequency range: 20 Hz—30 kHz
S/N: greater than 74 dB (nominal operating levels)
Distortion: 0.1% (20 Hz—10 kHz, +10 dBm unbalanced)
Compressor Ratio: 1:1 to 1:6.6
Compressor Threshold: -50 to -30 dBm (variable)
Compressor Dynamic Range: Max 25 dB (variable)
Hi-Cut Filter Cutoff: 6 kHz, 12 dB/octave
Lo-Cut Filter Cutoff: 60 Hz, -12 dB/octave
Crossover: 50—400 Hz (variable)
Filter Curve: 12 dB/octave
Dimensions: 19(W) x 3.6(H) x 9.7(D) in.

SDD-320

DIMENSION D



The Dimension D is a specially designed chorus effect for the spatial control of sound. The device will accept either a stereo or a mono signal input. Mono inputs are converted into a sound which fills the entire stereo field, an extremely vivid effect which gives the impression of a metamorphosis of space.

The Roland Dimension Decoder provides four different Dimensional modes for four distinct psychoacoustic results. The device provides both balanced and unbalanced inputs and outputs and an L.E.D. array constantly displays output level.

SPECIFICATIONS:

Inputs:

Balanced: XLR connector, 26 k ohm +4 dBm (max +14 dBm)

+4 dBm (max +14 dBm)

Outputs:

Balanced: XLR connector, 600 ohm min +4 dBm

Unbalanced: 1/4" phone jack, 600 ohm min +4 dBm

S/N: Better than 95 dB with noise reduction in operation

Power Consumption: 8 Watts

Dimensions: 19(W) x 3.6(H) x 7.9(D) in.

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SBF-325

STEREO FLANGER



The Roland Stereo Flanger is a versatile time delay device that will produce a wide variety of effects ranging from classic flanging to chorus and doubling effects. An outstanding operating feature is the second delay channel which permits the device to be run in a stereo situation. The addition of the second channel makes possible stereo panning which considerably increases the intensity of an already intense effect. Inverting the phase of either delay channel is easily done at the flick of a switch.

The Stereo Flanger has four effect modes—three of which are used in flanging, the other being used for chorus and doubling effects. Each mode is indicated by an L.E.D. which allows constant monitoring. The Flanger modes run in the following manner: Flanger 1 (monaural flanging), Flanger 2 (stereo flanging), Flanger 2 (cross-mix flanging).

While in each of the time delay modes there is complete flexibility over the sweep width and depth as well as manual delay control, all of which are contained in the Modulation section. The Feedback Control provides for regeneration of the signal, which gives an additional intensity to the effect.

Input level attenuator on the front panel allows for a variety of musical instrument inputs. The effect on/off function can be controlled either by the front panel switch or by use of an external foot switch.

SPECIFICATIONS:

Inputs:

Unbalanced Hi: 13 k ohm, +4 dBm (+20 dBm max)
Lo: 13 k ohm, -16 dBm (+10 dBm max)

Outputs:

Unbalanced Hi: 2 k ohm, +4 dBm (+20 dBm max)
Lo: 2 k ohm, -16 dBm (0 dBm max)

Noise Level: Better than -70 dBm

Bandwidth: 15 kHz

Delay Time:

Flanger: 0.5—15 ms

Chorus: 0.2—20 ms

Dimensions: 19(W) x 3.6(H) x 9.7(D) in.

SVC-350

VOCODER



The Roland Vocoder is the first truly sophisticated Vocoder to be priced within range of most musicians. The primary function of the Roland Vocoder is to analyze the spoken or sung human voice and use this information (or program) to trigger another musical signal (or carrier) giving the instrument the ability to "speak."

This vocal synthesis is accomplished by processing the voice through a series of eleven Voice Character analysis filters. All of the filters within the Voice Character control are active and control an envelope follower which reacts accor-

ding to the volume of that individual frequency. This information is then used to shape those frequencies of the carrier (musical instrument) signal.

The Roland Vocoder uses 10 filters for vowel sounds and there is also an extra filter with an extremely high slew rate allowing it to respond to the rapid transients of hard consonants, like the "T" in the word—Today. This consonant filter is a feature not found even on higher priced vocoders.

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SPV-355

P/V SYNTHESIZER



The SPV-355 is a Pitch-to-Voltage Converter with a self-contained synthesizer. The P/V Synthesizer will accept any conventional audio signal and convert it into a voltage that is used to control the synthesizer. Thus, the guitarist, woodwind or brass player, or even the vocalist can, for the first time, make extensive use of the synthesizer, (which has largely been the domain of keyboard players in the past).

The Synthesizer section contains two independently tunable Voltage Controlled Oscillators, (VCOs) as well as a Sub-Oscillator tied to VCO-1. This essentially gives the musician a three-VCO syn-

thesizer which, when mixed with the original instrument's sound, makes for an extremely rich, full sound. The Oscillators can be varied between three different waveforms, and over three selectable octave ranges.

The VCF (Voltage Controlled Filter) section is a wide-ranging (24 dB) filter, that is active from 10 Hz to 20 kHz. This provides a much "fatter" sound than is found on existing expander modules. Also contained is a VCA (Voltage Controlled Amplifier) for shaping the envelope generator cycle. The Synthesizer can also respond directly to the

The Roland Vocoder allows for both balanced and unbalanced program inputs and outputs and contains a special guitar input that permits attenuation of the guitar harmonics.

Another remarkable feature of the Roland Vocoder is a special Hold feature that locks on to the vowel sound quality so that one vowel sound does not have to be continually repeated while you play your instrument. With other features like the Ensemble effect, Headphone Output, as well as guitar amp and line outputs, the Roland Vocoder is truly the next step in musical instrument effects.

SPECIFICATIONS:

Microphone Input (program): 1/4" phone jack or XLR connector 600 ohm, -54 dBm min.

Instrument Input (carrier): 1/4" phone jack 100 k ohm guitar raw level

Guitar Amp Output: 1/4" phone jack 5 k ohm

Mono/Stereo Output: 1/4" phone jacks

Dimensions: 19(W) x 3.6(H) x 9.7(D) in.

envelope of the input (instrument) signal when switched to the envelope follower mode. Also contained in the Synthesizer section is a portamento control.

Most of the important control functions on the P/V Synthesizer, such as pitch and tone color, can be controlled externally by foot pedals. The tuning of the VCO-2 may be switched instantly between two preset settings by means of an external foot switch.

The instrument input is switchable between three positions; guitar, voice, and woodwind/brass. The pitch sensor has a special adapting circuit that adheres to the harmonic envelope of the different instrument input signals for absolutely flawless tracking. A Threshold control serves to attenuate the instrument inputs.

The Synthesizer section can be controlled externally by a sequencer or other trigger controller, and conversely, the P/V Synthesizer can be used to trigger other synthesizers so that you can further expand the sound. Like the other products in the Roland Rack system, the SPV-355 is designed to the dimensions of 19" in width, 3.6" in height and 9.7" in depth.

SRE-555

CHORUS ECHO



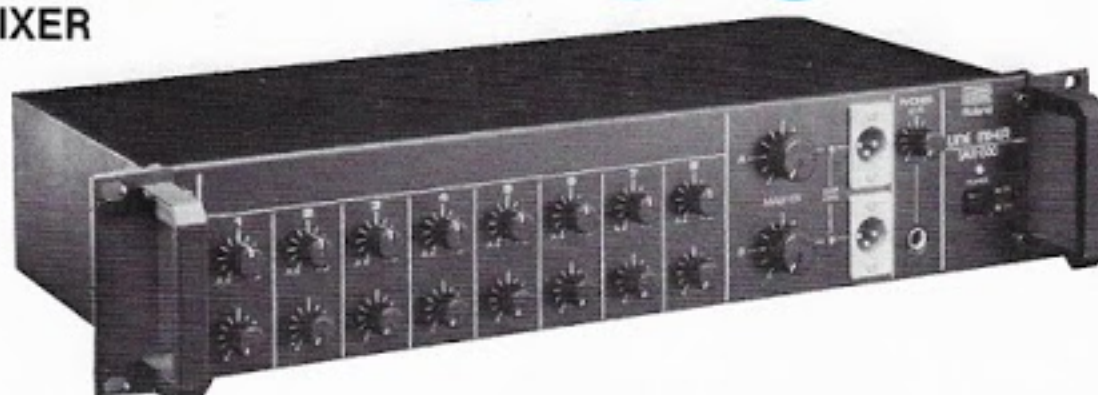
- Built for mounting on a standard 4U 19" rack (EIA standards). Ideal for both stage and studio.
- A new slide system allows tape replacement while the unit is mounted on the rack by simply removing two screws with a coin.

- XLR balanced connectors are used for both inputs and outputs.
- An advanced noise reduction system gives this unit a 77dB S/N ratio for a clearer echo.
- Delays from 0.55 to 1.8 seconds are possible in the Sound-on-Sound mode.

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SMX-880

LINE MIXER



- Low distortion and noise for improved sound quality.
- Equipped with eight input channels, two output channels and a stacking input for a wider application range.
- An attenuation switch is provided for each input channel for connection to +4dBm and -20dBm lines.

- Equipped with a standard jack for input, and standard jacks (-20dBm/+4dBm selected) and XLR balanced connectors (+4dBm) capable of handling two output channels for parallel output connections.
- Headphone monitoring.
- Space is provided at the top of each input channel for a memorandum.

SST-120

PROFESSIONAL SOUND SYSTEM

This portable, full-range, three-way speaker system features a powerful sound and extremely well balanced frequency characteristics for a wider application range. It can be used for PA, keyboards and bass guitars.



SPECIFICATIONS:

Input Level/Impedance:
Input 1 (XLR): +4dBm/30kΩ
Input 2 (1/4" Phone Jack): 0dBm/47kΩ, -25dBm/220kΩ, -50dBm/6.6kΩ
Output Level/Load Impedance:
Output (XLR): +4dBm/over than 600Ω
Output A, B (1/4" Phone Jack): 0dBm, -25dBm, -50dBm/over than 5kΩ (0dB = 0.775V)
Dimensions: 480(W) × 180(H) × 445(D)mm (18.9" × 7.1" × 17.5")
Weight: 15.7kg (34.54 lbs.)

SPECIFICATIONS:

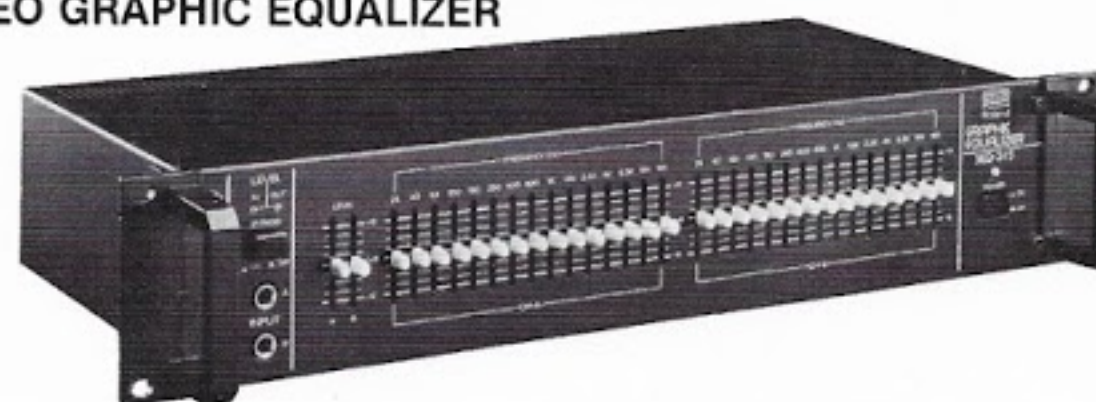
Frequency Response: 20Hz to 70kHz ±1dB
Distortion: 0.1% typical less than 0.3%
Balanced Outputs:
Maximum Output Level: +20dBm at 600Ω load
Output Impedance: 600Ω ±10%
Load Impedance: More than 600Ω
Unbalanced Outputs:
Maximum Output Level: +20dBm at 600Ω load
Output Impedance: Less than 1kΩ
Load Impedance: More than 10kΩ
Input Channels:
Input Level (SW -20dBm): Normal -20dBm, maximum 0dBm
Input Level (SW +4dBm): Normal +4dBm, maximum +24dBm
Input Impedance (SW -20dBm): 90kΩ
Input Impedance (SW +4dBm): 30kΩ
Bus Inputs:
Input Level: +24dBm
Input Impedance: More than 500kΩ
S/N: 80dB
Dimensions: 482(W) × 92(H) × 350(D)mm (19" × 3.6" × 13.8")
Weight: 4.8kg (10.56 lbs.)

SPECIFICATIONS:

Speakers: Woofer 38cm (R & P) × 1, Mid Range Horn × 1, Tweeter Horn × 2
Frequency Response: 50Hz ~ 20kHz
Nominal Impedance: 8Ω
Power Handling Capacity: 120W (rms) Continuous
Dimensions: 584(W) × 838(H) × 468(D)mm (23.0" × 33.0" × 18.4")
Weight: 43kg (94.6 lbs.)

SEQ-315

STEREO GRAPHIC EQUALIZER



Model SEQ-331 (MONO) covers a 20Hz to 20kHz frequency range with 31 one-third octave bands for extremely precise and versatile tone control.

Model SEQ-315 (STEREO) is equipped with two channels, and has a 25Hz to 16kHz frequency range divided into 15 two-thirds octave bands.

Level selection switches with 0 and

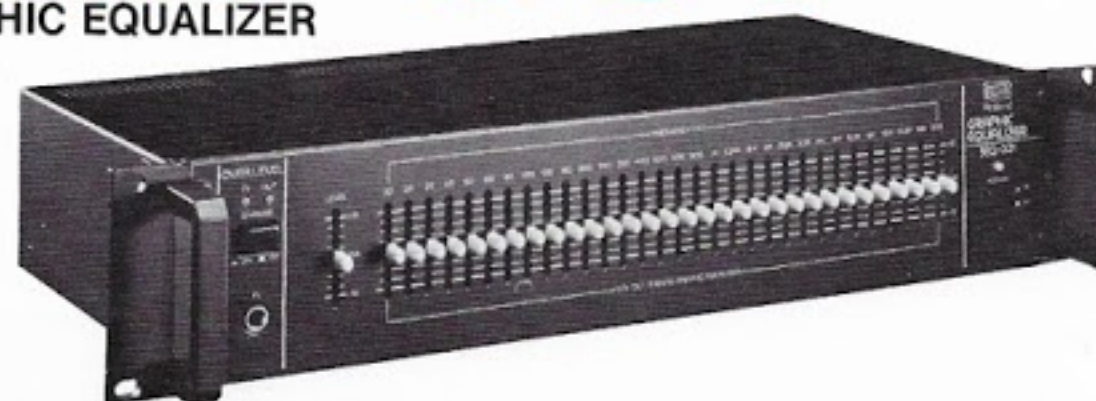
-20dB settings are provided for unbalanced inputs and outputs. The input has a 100kΩ impedance.

Input jacks are arranged on both the front and rear panels, with the front-panel jack having priority. The addition of a bypass switch and input/output LED level monitors simplifies and speeds operation.

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SEQ-331

GRAPHIC EQUALIZER



Accessories

KS-300
Display Stand



Carrying cases for 6, 3 units and 1 unit are also available.



SPECIFICATIONS:

EQ Control Range: ±12dB
Level Control Range: ±12dB
Slider Stroke: 30mm with 3 points detented
Frequency Response: 25Hz ~ 16kHz ±1.5dB
Crosstalk: More than 60dB at 1kHz
Distortion: 0.03% typical
Inputs:
Maximum Input Level (SW 0dB): +20dBm at slider 0dB (SW -20dB): 0dBm at slider 0dB

Impedance Balanced: 26kΩ
Unbalanced: 100kΩ
Outputs:
Maximum Level: +20dBm
Load Impedance Balanced: More than 600Ω
Unbalanced: More than 10kΩ
S/N: 80dB
Dimensions: 482(W) × 92(H) × 350(D)mm (19" × 3.6" × 13.8")
Weight: 4.3kg (9.46 lbs.)

EQ Center Frequencies: 25, 40, 63, 100, 160, 250, 400, 630, 1k, 1.6k, 2.5k, 4k, 6.3k, 10k, 16k

ALTERNATE ONE-THIRD OCTAVES CENTERS

SPECIFICATIONS:

EQ Control Range: ±12dB
Level Control Range: ±12dB
Slider Stroke: 30mm with 3 points detented
Frequency Response: 20Hz ~ 20kHz ±1.5dB
Distortion: 0.03% typical
Inputs:
Maximum Input Level (SW 0dB): +20dBm at slider 0dB (SW -20dB): 0dBm at slider 0dB

Impedance Balanced: 26kΩ
Unbalanced: 100kΩ
Outputs:
Maximum Level: +20dBm
Load Impedance Balanced: More than 600Ω
Unbalanced: More than 10kΩ
S/N: 80dB
Dimensions: 482(W) × 92(H) × 350(D)mm (19" × 3.6" × 13.8")
Weight: 4.2kg (9.24 lbs.)

EQ Center Frequencies: 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 320, 400, 500, 630, 800, 1k, 1.25k, 1.6k, 2k, 2.5k, 3.2k, 4k, 5k, 6.3k, 8k, 10k, 12.5k, 16k, 20k, ONE-THIRD OCTAVE CENTERS

Specifications subject to change without notice.

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